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CLAIMS

1. A base for a honeycomb filter comprising:

a ceramic porous body having a number of fine pores, and

5 a plurality of cells separated from each other by partition walls, the cells functioning as fluid passages;

wherein 50% pore diameter (d_{50}) of said ceramic porous body is within the range from 8.5 to 13 μm , and the partition walls separating the plurality of cells have an average surface roughness of 3.0 to 5.5 μm ,

10 where "50% pore diameter (d_{50})" is a pore diameter measured by a method of mercury penetration and calculated from a pressure when a cumulative volume of mercury press-fitted into the porous body is 50% of the volume of the whole pores of the porous body.

2. A method for producing a base for a honeycomb filter, comprising the steps of:

15 mixing and kneading aggregate particles and water to obtain clay,

forming the clay in a honeycomb shape having a plurality of cells separated from each other by partition walls, the cells functioning as fluid passages,

drying the clay in a honeycomb shape to obtain a honeycomb formed body,

and

20 firing the honeycomb formed body to obtain the base for the honeycomb filter;

wherein 50% particle diameter (D_{50}) of the aggregate particles is within the range of 50 to 70 μm , and the 50% particle diameter (D_{50}) with 25% particle diameter (D_{25}) and 75% particle diameter (D_{75}) satisfies the relation of the following formulae (1) and (2):

25 $0.4 \leq D_{25}/D_{50} \quad (1)$

$$D_{75}/D_{50} \leq 1.4 \quad (2)$$

where "x% particle diameter (D_x)" is a particle diameter measured by a sieving method, the particle diameter being at the point where cumulative mass of powder meets x% of the whole mass on a particle size distribution curve given from a relation between a mesh

diameter and mass of powder remaining on the sieve using a plurality of sieves having different normal mesh diameters.

3. A method for producing a base for a honeycomb filter according to Claim 2,

5 wherein the 50% particle diameter (D_{50}) of the aggregate particles with thickness (W) of the partition walls of the base for the honeycomb filter satisfies the following formula (3):

$$D_{50}/W \leq 0.12 \quad (3)$$

4. A honeycomb filter comprising:

10 a base for the honeycomb filter according to Claim 1,

an intermediate membrane comprising a porous body having smaller 50% pore diameter (d_{50}) than the ceramic porous body constituting said base, the intermediate membrane being formed on a surface of the partition walls separating the plurality of cells from each other of the base for the honeycomb filter, and

15 a filtration membrane comprising a porous body having smaller 50% pore diameter (d_{50}) than the porous body constituting the intermediate membrane, the filtration membrane being formed on a surface of the intermediate membrane.